AN EXPERIMENTAL STUDY ON THE ACCUMULATION OF Ga-67 IN INFLAMMATORY LESIONS. A.Kudoh‡ Y.Furukawa‡ S.Morita‡H.Ohtake‡and K.Yano.** *Dept.of Radiology,Kurume Univ.School of Medicine,**Yayagawa Public Hospital.

F. coli K 12 strain were injected into the gastrocnemius muscle of mature rabbits unilateral to produce inflammatory lesions. Changes in the accumulation of Ga as a function of the inflammation course were observed by taking a tissue specimen for microscopic examination, scintigraphy and autoradiography. Only one day after the production of inflammatory lesions, a large infiltration of neutrophils developed and Ga accumulation 4.6 times as strong as the normal side was seen. In one week, an abscess had formed and infiltration of neutrophils was intense. Ga accumulation was as strong as 4 times normal. In two weeks, infiltration of cells began to decrease and granulation and fibrosis becomes marked. The Ga accumulation ratio decreased to 1.7 times. In 3 or 4 weeks, granulation and fibrosis were the main constituents. Ga accumulation ratio approximated the normal side at 1.3 times normal. The best time for scintigraphy seems to be 48 hours after the administration of Ga-citrate. By morphological examination, Ga accumulation was seen corresponding to the sites infiltrated with neutrophils.


Ga-67 scintigraphy was performed in 39 cases of lung cancer, 26 cases of malignant lymphoma, and 23 cases of esophageal cancer, before, during and after radiation therapy. Before radiation therapy, 94.7% of lung cancer, 93.3% of malignant lymphoma, and 74% of esophageal cancer were positive by Ga-67 scintigraphy. After radiation therapy, 11 cases of lung cancer, 3 cases of malignant lymphoma, and 1 case of esophageal cancer were positive by both Ga-67 scintigraphy and clinically or histologically. Eight cases of lung cancer, 4 cases of malignant lymphoma, and 3 cases of esophageal cancer were positive by scintigraphy but negative histologically or clinically (may be due to radiation effects). Sixteen cases of lung cancer, 17 cases of malignant lymphoma and 15 cases of esophageal cancer were negative by scintigraphy but positive histologically or clinically. Two cases of lung cancer, 1 case of malignant lymphoma and 1 case of esophageal cancer were negative by both scintigraphy and histologically or clinically. These results indicate, Ga-67 scintigraphy is useful in 1) The staging of lung cancer and malignant lymphoma, 2) The estimation of the effects of radiation therapy, 3) The decision of necessity of further treatment, 4) The early detection of the radiation pneumonitis.

DIAGNOSTIC EFFICACY OF Ga-67-CITRATE SCINTIGRAPHY IN INFLAMMATORY DISEASES. M.Ishizawa,Y.Komatsu,A.Suzuki,Y.Sakata,T.Kono‡ R.Ito†‡T.Detô†‡S.Tomita‡* Hiroaki University School of Medicine,Misawa City Hospital, Goshogawara Seiboku Hospital,** Hiroaki,Misawa and Goshogawara.

Although Ga-67-citrate is a most extensively used agent for detecting tumors, its use for inflammatory processes is not well recognized yet. The authors reported 64 scans with Ga-67-citrate on patients who had strong clinical confirmation of inflammation. Scans were obtained at 48 hours and 72 hours postinjection of 2 mCi of Ga-67-citrate. Abnormal accumulation of radiogallium was observed in a man with subacute thyroiditis, a female with acute pyelonephritis and a man with acute appendicitis. In lung scans, Ga-67 positive lesions were observed in 7 of 14 patients with lung T.B., 2 of 4 patients with acute bronchitis, 5 of 6 patients with pneumonia, 7 of 9 patients with pneumonia, 3 of 4 cases with lung abscess and all 3 cases with sarcoidosis. Repeated lung scans revealed remarkable decrease in radioactivity on the Ga-67 positive lesions following adequate therapy. Our data show that Ga-67-citrate scintigraphy is a useful procedure of evaluating the severity and the stage of lung T.B., pneumonia and sarcoidosis and the recovery from abscess of the lung.


Ga-67 scintigraphy was performed in 39 cases of lung cancer, 26 cases of malignant lymphoma, and 23 cases of esophageal cancer, before, during and after radiation therapy. Before radiation therapy, 94.7% of lung cancer, 93.3% of malignant lymphoma, and 74% of esophageal cancer were positive by Ga-67 scintigraphy. After radiation therapy, 11 cases of lung cancer, 3 cases of malignant lymphoma, and 1 case of esophageal cancer were positive by both Ga-67 scintigraphy and clinically or histologically. Eight cases of lung cancer, 4 cases of malignant lymphoma, and 3 cases of esophageal cancer were positive by scintigraphy but negative histologically or clinically (may be due to radiation effects). Sixteen cases of lung cancer, 17 cases of malignant lymphoma and 15 cases of esophageal cancer were negative by scintigraphy but positive histologically or clinically. Two cases of lung cancer, 1 case of malignant lymphoma and 1 case of esophageal cancer were negative by both scintigraphy and histologically or clinically. These results indicate, Ga-67 scintigraphy is useful in 1) The staging of lung cancer and malignant lymphoma, 2) The estimation of the effects of radiation therapy, 3) The decision of necessity of further treatment, 4) The early detection of the radiation pneumonitis.